The more caudal we pass, the more medial do we find the degenerated area ; in the lumbar portion it occupies the ventro-*medial* corner of the anterior column. Here hardly any degeneration is noted on the opposite side.

The area of degeneration of the antero-lateral column is the direct continuation of the degeneration in the Vorderseitenstrangrest of the medulla oblongata.

3. In fibres of anterior root bundles of the spinal nerves.

To sum up there was, dependent upon lesion of the inferior cerebellar peduncle degeneration in the following tracts :

I. Posterior longitudinal fascicles, some degenerated fibres of which contribute to the formation of roots of cerebral nerves.

II. Vorderseitenstrangrest, continuing into the antero-lateral further caudal into the anterior column of the cord.

III. Seitenstrangrest, continuing into the area which forms part of the lateral pyramidal tracts, which shows that these contain a cerebellar system of fibres.

IV. Fibres of anterior root bundles of spinal nerves.

V. Fibræ arcuatæ internæ which connects the cerebellum by way of the corpus restiforme with the inferior olive of the opposite side.

All these tracts conduct centrifugally having their cells of origin in the cerebellum ONUF.

The Sensible Touch, Temperature and Pain, and Sensory Optic, Acoustic, Olfactory, etc., Conducting Pathways and Centres.—Jelgersma (*Neurolog. Centralblatt*, 1895, No. 7).

Ramon y Cajal and Lenhossek found that part of the fibres of the posterior roots of the spinal nerves instead of ending in the gray substance of the spinal cord by way of collateral and end branches, enter the anterior horns to become axis-cylinders of the large motor ganglionic cells, these fibres being thus homologous to those of the anterior roots. Probably the conduction in these fibres is centrifugal instead of centripetal as in the rest of the fibres of the posterior roots.

In order to control these results of Cajal and to find whether they also apply to the higher sensory nerves (opticus), the author extirpated one or both eyes of very young doves and examined their central nervous system, after they had become full grown, by Nissl's method. The result was a considerable atrophy of the crossed optic lobe. This atrophy is two-fold : 1. An atrophy of those ganglionic cells of the optic lobe, the protoplasmic processes of which enter in intimate contact with the end trees of opticus fibres. These cells were diminished in size and changed in structure. The author proposes to call this atrophy "functional atrophy."

2. A circumscribed nucleus of the optic lobe (ganglion dorsal optici) has undergone complete destruction, all its ganglionic cells have disappeared, being substituted by an indifferent tissue (numerous nuclei and neurological elements). This kind of atrophy the author proposes to call "organic degeneration."

Functional degeneration (or atrophy) means individual preservation of the nerve cell with alteration of size and structure.

Organic degeneration signifies complete destruction of the ganglionic cell with substitution of the whole by foreign tissue.

Organic degeneration takes place in an injured or diseased neuron and does not surpass its limits.

Partial functional degeneration needs at least two neurons for its development. The first neuron degenerates organically (for instance end trees of sensory root fibres in spinal (after section of posterior fibres) cord), the second neuron, which connects itself with the end of the first neuron, degenerates functionally (for instance the small cells of the substastia gelatinosa Rolandi, etc., which are connected with the aforesaid end trees of posterior root fibres). Sometimes the functional degeneration can extend even over several neurons.

T. then mentions that aside from the complete disappearance of the circumscribed nucleus in the optic lobe a semilunar bundle of fibres which forms a kind of capsule around said neucleus, was atrophied. This bundle must accordingly contain the axiscylinders of the nerve cells of the said nucleus. The fibres of the bundle are evidently homologous to the posterior root fibres of the spinal nerves which Cajal found to take origin from motor ganglionic cells. The grouping of said fibres to a circumscribed bundle in the optic nerve denotes that the latter is higher organized than the posterior roots of spinal nerves. Otherwise there is a complete homology. The spinal ganglion of the spinal nerves is represented by the retina for the optic nerves. The nerve nuclei for the optic nerve are homologous with those ganglionic cells of the spinal cord around which the fibres of the posterior roots spread their end trees. A similar homology with the posterior roots and spinal ganglions of spinal nerves can be found for the acoustic nerve; here the ganglion spinale cochlea corresponds to the spinal ganglion of spinal nerves.

ONUF.

On the Fine Anatomy of the Optic Roof* (*tetto optico*) *of the Teleostei Fish.—D. Mirto (*Rivista sperimentale di freniatria, etc.*, vol. xxi , 1895, fasc. I.)

M. worked with the method of Golgi. His conclusions are:

I. The superficial fibres of the optic nerve are centripetal; they terminate in the optic roof (tetto optico), a small part of them also in the corpus geniculatum externum by means of the so-called terminal arborisations.

II. Those of the deep (central) optical fibres, which originate from cells of the optic roof, are centrifugal of those which direct themselves towards the corona radiata of Gottsche coming directly from the optic nerve or from the optic roof. Nothing positive can be said neither regarding their nature nor regarding their connections, our knowledge on the general connection of nerve elements not being sufficiently advanced in that direction.

III. The protoplasmatic processes in the optic roofs seem to be chiefly apparatus for the storage of luminous stimuli, at least their intimate relation to the terminal arborisations of the superficial optic fibres speaks in favor of this theory.

IV. The protoplosmatic processes of certain cells of the optic roof have such a uniform and fine delicate appearance in their whole course that they can not be distinguished from the nervous processes which give origin to a nerve fibre. It seems that in fish a real differentiation between protoplasmatic and nervous processes is not perfectly established yet.

ONUF.

PHYSIOLOGICAL.

Section of Both Pyramids in Dogs.—Preliminary communication. T. Starlinger (*Neurolog. Centralblatt*, No. 9).

The technic of the operation consisted in freeing the basilar portion of the occipital bone and trephining it. The pyramids are thus made visible and could be cut through with surety and ease at the point where they come forth from beneath the trapezoid body. The animals first showed slight motor disturbances which gradually vanished, so that two weeks after the operation they did not differ from normal dogs, being just as lively and skillful in their movements. Microscopic examination of the medulla of the operated dogs proved that the pyramids had been completely severed.

The author concludes:

1st. That the pyramidal tracts of dogs have only subordinate importance for locomotion.

2d. That in dogs there must still exist a motor pathway for the